Factorising - difference of two squares (DOTS)

$$a^2 - b^2 = (a+b)(a-b)$$

! learn your square numbers!

eg $x^2 - 16 = (x+4)(x-4)$

$x^2 - 49 = (x+7)(x-7)$

$4x^2 - 9 = (2x+3)(2x-3)$

$81 - t^2 = (9+t)(9-t)$

$100a^2 - 36c^2 = (10a+6c)(10a-6c)$

$121x^4 - y^6 = (11x^2+y^3)(11x^2-y^3)$

Sometimes you need to take out a common factor first!

eg $\frac{2c^2 - 50}{3} = \frac{2(c^2-25)}{3} = \frac{2(c+5)(c-5)}{3}$

$\frac{3a^2 - 147}{} = \frac{3(a^2-49)}{} = \frac{3(a+7)(a-7)}{}$

Specialist only (can use $\sqrt{\ }$ form too!)

eg $x^2 - 13 = (x+\sqrt{13})(x-\sqrt{13})$

$2x^2 - 15 = (\sqrt{2}x+\sqrt{15})(\sqrt{2}x-\sqrt{15})$